

SEQUENCE LISTING

10> De Samblanx, Genoveva Broekaert, Willem Rees, Sarah

- <120> Antifungal Proteins
- <130> SYN-034DV
- <140> US 10/006,252
- <141> 2001-12-04
- <150> 09/077,951
- <151> 1998-06-10
- <150> GB 9525474.4
- <151> 1995-12-13
- <150> PCT/GB96/03065
- <151> 1996-12-12
- <160> 77
- <170> PatentIn Ver. 2.0
- <210> 1
- <211> 36
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Description of Artificial Sequence:primer
- <400> 1
- tatcagtcga cgcatgctat tgataagatt taaagg
- <210> 2
- <211> 37
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Description of Artificial Sequence:primer
- <400> 2
- aataagcttg gacaagagac agaagttgtg ccaaagg
- <210> 3
- <211> 28
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Description of Artificial Sequence:primer
- <400> 3
- aaggatccct attaacaagg aaagtagc

36

37

```
<210> 4
<211> 28
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence:primer
<400> 4
aatgctagct cagaagttgt gccaaagg
                                                                    28
<210> 5
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:primer
<400> 5
                                                                    20
aggaaacagc tatgaccatg
<210> 6
<211> 41
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence:primer
<400> 6
                                                                    41
ggaatagccg atggagatct aggaaaacag ctatgaccat g
<210> 7
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence:primer
<400> 7
                                                                    24
ggaatacccg atcgagatct agga
<210> 8
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 8
Gln Lys Leu Cys Glu Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg
                                  25
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
```

```
Phe Pro Cys
     50
<210> 9
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 9
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
                                      10
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
    50
<210> 10
<211> 50
<212> PRT
<213> Raphanus sativus
<400> 10
Lys Leu Cys Glu Arg Ser Ser Gly Thr Trp Ser Gly Val Cys Gly Asn
Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Gly Ala Gln His
Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr Phe
Pro Cys
<210> 11
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 11
Gln Lys Leu Cys Glu Arg Ser Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Gly Ala Arg
His Gly Ser Cys Asn Tyr Ile Phe Pro Tyr His Arg Cys Ile Cys Tyr
         35
```

```
Phe Pro Cys
   50
<210> 12
<211> 27
<212> PRT
<213> Brassica rapa
<400> 12
Gln Lys Leu Cys Glu Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn
<210> 13
<211> 27
<212> PRT
<213> Brassica rapa
<220>
<221> SITE
<222> (11)
<223> Xaa is a non-standard amino acid; thought to be a
     post-translational modification of a standard
      amino acid
<400> 13
Gln Lys Leu Cys Glu Arg Pro Ser Gly Thr Xaa Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg
<210> 14
<211> 30
<212> PRT
<213> Brassica napus
<400> 14
Gln Lys Leu Cys Glu Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys
                                 25
<210> 15
<211> 23
<212> PRT
<213> Brassica napus
<400> 15
Gln Lys Leu Cys Glu Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
 1
```

```
Asn Asn Asn Ala Cys Lys Asn
            20
<210> 16
<211> 25
<212> PRT
<213> Sinapis alba
<400> 16
Gln Lys Leu Cys Glu Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys
<210> 17
<211> 26
<212> PRT
<213> Sinapis alba
<400> 17
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Arg Asn Gln Cys Ile
<210> 18
<211> 27
<212> PRT
<213> Arabidopsis thaliana
<400> 18
Gln Lys Leu Cys Glu Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Ser Asn Ala Cys Lys Asn Gln Cys Ile Asn
<210> 19
<211> 414
<212> DNA
<213> Raphanus sativus
<400> 19
gttttattag tgatcatggc taagtttgcg tccatcatcg cacttctttt tgctgctctt 60
gttctttttg ctgctttcga agcaccaaca atggtggaag cacagaagtt gtgcgaaagg 120
ccaagtggga catggtcagg agtctgtgga aacaataacg catgcaagaa tcagtgcatt 180
aaccttgaga aagcacgaca tggatcttgc aactatgtct tcccagctca caagtgtatc 240
tgctactttc cttgttaatt tatcgcaaac tctttggtga atagttttta tgtaatttac 300
acaaaataag tcagtgtcac tatccatgag tgattttaag acatgtacca gatatgttat 360
<210> 20
```

```
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 20
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
    50
<210> 21
<211> 47
<212> PRT
<213> Sorghum bicolor
<400> 21
Arg Val Cys Met Lys Gly Ser Ala Gly Phe Lys Gly Leu Cys Met Arg
Asp Gln Asn Cys Ala Gln Val Cys Leu Gln Glu Gly Trp Gly Gly
Asn Cys Asp Gly Val Met Arg Gln Cys Lys Cys Ile Arg Gln Cys
<210> 22
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 22
Gln Lys Leu Cys Met Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
    50
<210> 23
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 23
```

Gln Lys Leu Cys Gln Arg Pro Ser Gly Gly Trp Ser Gly Val Cys Gly Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr Phe Pro Cys 50 <210> 24 <211> 51 <212> PRT <213> Raphanus sativus <400> 24 Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Ser Ser Gly Val Cys Gly Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr Phe Pro Cys 50 <210> 25 <211> 51 <212> PRT <213> Raphanus sativus <400> 25 Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Met Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr Phe Pro Cys 50 <210> 26 <211> 51 <212> PRT <213> Raphanus sativus <400> 26 Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly

```
1
                                      10
                                                          15
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Trp Arg
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
    50
<210> 27
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 27
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Gly Val Phe Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
   50
<210> 28
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 28
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Val Met Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
<210> 29
<211> 51
<212> PRT
<213> Raphanus sativus
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
```

```
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Gln Cys Ile Cys Tyr
                             40
Phe Pro Cys
     50
<210> 30
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 30
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Val Pro Pro Ala His Lys Cys Ile Cys Ile
Phe Pro Cys
   50
<210> 31
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 31
Gln Lys Leu Cys Gln Arg Pro Ser Gly Ala Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
   50
<210> 32
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 32
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
                                     10
```

```
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
Ala Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
     50
<210> 33
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 33
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Ala Val Phe Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
     50
<210> 34
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 34
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Val Ala Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
     50
<210> 35
<211> 50
<212> PRT
<213> Raphanus sativus
<400> 35
Gln Lys Leu Cys Gln Arg Ser Gly Thr Trp Ser Gly Val Cys Gly Asn
                  5
Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg His
```

20 25 30 Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr Phe Pro Cys 50 <210> 36 <211> 50 <212> PRT <213> Raphanus sativus <400> 36 Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg His Gly Ser Cys Asn Tyr Val Pro Ala His Lys Cys Ile Cys Tyr Phe Pro Cys 50 <210> 37 <211> 51 <212> PRT <213> Raphanus sativus <400> 37 Gln Lys Leu Cys Gln Arg Arg Ser Gly Thr Trp Ser Gly Val Cys Gly Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr Phe Pro Cys 50 <210> 38 <211> 51 <212> PRT <213> Raphanus sativus <400> 38 Gln Lys Leu Cys Gln Arg Pro Ser Arg Thr Trp Ser Gly Val Cys Gly

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg

```
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
                                 40
                                                     45
   Phe Pro Cys
        50
   <210> 39
   <211> 51
   <212> PRT
  <213> Raphanus sativus
  <400> 39
  Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Arg Gly Val Cys Gly
  Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
  His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
  Phe Pro Cys
       50
 <210> 40
 <211> 51
 <212> PRT
 <213> Raphanus sativus
 <400> 40
 Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
 Asn Asn Asn Ala Cys Lys Asn Gln Cys Arg Arg Leu Glu Lys Ala Arg
20 25 30
 His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
 Phe Pro Cys
      50
<210> 41
<211> 51
<212> PRT
<213> Raphanus sativus
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Arg Glu Lys Ala Arg
```

```
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
     50
<210> 42
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 42
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Arg Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
    50
<210> 43
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 43
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Arg Phe Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
     50
<210> 44
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 44
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Val Phe Pro Arg His Lys Cys Ile Cys Tyr
```

```
35
                               40
                                                   45
 Phe Pro Cys
      50
 <210> 45
 <211> 51
 <212> PRT
 <213> Raphanus sativus
 <400> 45
 Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
 Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
 His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Arg Cys Tyr
 Phe Pro Cys
      50
 <210> 46
 <211> 51
 <212> PRT
<213> Raphanus sativus
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
                              40
Arg Pro Cys
     50
<210> 47
<211> 43
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence:primer
<400> 47
aataagcttt ggacaagaga cagaagttgt gcatgaggcc aag
                                                                   43
<210> 48
<211> 27
<212> DNA
```

Page 14

<213> Artificial Sequence	
<220> <223> Description of Artificial Sequence:primer	
<220> <221> misc_feature <222> (13)(15) <223> n = any nucleotide	
<400> 48 ttgtgccaaa ggnnnagtgg gacatgg	27
<210> 49 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence:primer	
<400> 49 ccaagtgggg gttggtcagg	20
<210> 50 <211> 21 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence:primer	
<400> 50 agtgggacat cctcaggagt c	21
<210> 51 <211> 23 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence:primer	
<400> 51 ggagtctgta tgaacaataa cgc	23
<210> 52 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence:primer	
<400> 52 tcttgcaacg gtgtcttccc	20
<210> 53	

```
<211> 22
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence:primer
<400> 53
                                                                    22
tgcaactatg tcatgccagc ta
<210> 54
<211> 23
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence:primer
<400> 54
ttcccagctc accaatgtat ctg
                                                                    23
<210> 55
<211> 26
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:primer
<220>
<221> misc feature
<222> (13)..(15)
<223> n = any nucleotide
<400> 55
                                                                    26
aactatgtct tcnnngctca caagtg
<210> 56
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence:primer
<400> 56
                                                                    20
tgtatctgca tctttccttg
<210> 57
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 57
Gln Lys Leu Cys Glu Arg Pro Ser Arg Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg
             20
```

```
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
    50
<210> 58
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 58
Gln Lys Leu Cys Glu Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Arg Phe Pro Ala His Lys Cys Ile Cys Tyr
                             40
Phe Pro Cys
    50
<210> 59
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 59
Gln Lys Leu Cys Glu Arg Pro Ser Arg Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Arg Phe Pro Ala His Lys Cys Ile Cys Tyr
                             40
Phe Pro Cys
    50
<210> 60
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 60
Gln Lys Leu Cys Met Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg
                                  25
```

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr

```
Phe Pro Cys
     50
<210> 61
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 61
Gln Lys Leu Cys Glu Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Met
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
     50
<210> 62
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 62
Gln Lys Leu Cys Gln Arg Pro Ser Arg Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
     50
<210> 63
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 63
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Arg Phe Pro Ala His Lys Cys Ile Cys Tyr
```

35 40 45 Phe Pro Cys 50 <210> 64 <211> 51 <212> PRT <213> Raphanus sativus <400> 64 Gln Lys Leu Cys Gln Arg Pro Ser Arg Thr Trp Ser Gly Val Cys Gly Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg His Gly Ser Cys Asn Tyr Arg Phe Pro Ala His Lys Cys Ile Cys Tyr Phe Pro Cys 50 <210> 65 <211> 51 <212> PRT <213> Raphanus sativus <400> 65 Gln Lys Leu Cys Met Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr Phe Pro Cys 50 <210> 66 <211> 51 <212> PRT <213> Raphanus sativus <400> 66 Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Met Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr

```
Phe Pro Cys
  <210> 67
  <211> 50
  <212> PRT
 <213> Raphanus sativus
 <400> 67
 Lys Leu Cys Glu Arg Ser Ser Arg Thr Trp Ser Gly Val Cys Gly Asn
 Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Gly Ala Gln His
 Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr Phe
 Pro Cys
      50
 <210> 68
 <211> 50
 <212> PRT
 <213> Raphanus sativus
 <400> 68
Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Gly Ala Gln His
Gly Ser Cys Asn Tyr Arg Phe Pro Ala His Lys Cys Ile Cys Tyr Phe
Pro Cys
     50
<210> 69
<211> 50
<212> PRT
<213> Raphanus sativus
<400> 69
Lys Leu Cys Glu Arg Ser Ser Arg Thr Trp Ser Gly Val Cys Gly Asn
Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Gly Ala Gln His
Gly Ser Cys Asn Tyr Arg Phe Pro Ala His Lys Cys Ile Cys Tyr Phe
                           40
```

```
Pro Cys
<210> 70
<211> 50
<212> PRT
<213> Raphanus sativus
<400> 70
Lys Leu Cys Met Arg Ser Ser Gly Thr Trp Ser Gly Val Cys Gly Asn
Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Gly Ala Gln His
Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr Phe
Pro Cys
     50
<210> 71
<211> 50
<212> PRT
<213> Raphanus sativus
<400> 71
Lys Leu Cys Glu Arg Ser Ser Gly Thr Trp Ser Gly Val Cys Met Asn
Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Gly Ala Gln His
Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr Phe
                             40
Pro Cys
<210> 72
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 72
Gln Lys Leu Cys Glu Arg Ser Ser Arg Thr Trp Ser Gly Val Cys Gly
Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Gly Ala Arg
His Gly Ser Cys Asn Tyr Ile Phe Pro Tyr His Arg Cys Ile Cys Tyr
Phe Pro Cys
```

50

```
<210> 73
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 73
Gln Lys Leu Cys Glu Arg Ser Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Gly Ala Arg
```

His Gly Ser Cys Asn Tyr Arg Phe Pro Tyr His Arg Cys Ile Cys Tyr

Phe Pro Cys 50

<210> 74 <211> 51 <212> PRT <213> Raphanus sativus

<400> 74 Gln Lys Leu Cys Glu Arg Ser Ser Arg Thr Trp Ser Gly Val Cys Gly

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Gly Ala Arg

His Gly Ser Cys Asn Tyr Arg Phe Pro Tyr His Arg Cys Ile Cys Tyr

Phe Pro Cys 50

<210> 75 <211> 51 <212> PRT <213> Raphanus sativus

<400> 75 Gln Lys Leu Cys Met Arg Ser Ser Gly Thr Trp Ser Gly Val Cys Gly

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Gly Ala Arg

His Gly Ser Cys Asn Tyr Ile Phe Pro Tyr His Arg Cys Ile Cys Tyr 40

Phe Pro Cys 50

```
<210> 76
<211> 51
<212> PRT
<213> Raphanus sativus
<400> 76
Gln Lys Leu Cys Glu Arg Ser Ser Gly Thr Trp Ser Gly Val Cys Met
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Gly Ala Arg
His Gly Ser Cys Asn Tyr Ile Phe Pro Tyr His Arg Cys Ile Cys Tyr
Phe Pro Cys
    50
<210> 77
<211> 51
<212> PRT
<213> Raphanus sativus
<220>
<221> SITE
<222> (1)
<223> Xaa is pyroglutamyl
<400> 77
Xaa Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
Phe Pro Cys
    50
```